Aliso Beach
Orange County, California
Annual Summary 2004

J01P28 Interim Water Quality Improvement Package Plant BMP Agreement 01-227-55

Goals And Scope Of Project

The purpose of the project is to treat approximately 100,000 gallons to 150,000 gallons per day of dry-weather urban runoff from Springdale Storm Drain to REC 1 standards and, thereby, improve the water quality in Aliso Creek and at Aliso Beach. This project also includes an effort to educate the public about the need to clean up the environment.

Accomplished To Date

In 2002, the County of Orange contracted for the installation of a Clear Creek Systems, Inc. (CCS) package plant treatment system.

The package plant treatment system has three main phases:

- Sediment and debris removal
- Oils, pesticides, and trace metals removal
- Disinfection

The system began operation July 31, 2003.

Weekly monitoring of the CCS, Inc. treatment system indicates that it is capable of reducing the concentration of fecal coliform geomean by 99% and has succeeded in reducing the contribution of pollutants to Aliso Creek.

The CCS system requires backwashing of the multi-media filter. The backwash water is discharged to the Moulton Niguel Water District (MNWD) sanitary sewer system. Discharging to the MNWD sewer system requires a Nuisance Water – Special Wastewater Discharge permit (NSWD). The NSWD permit prohibits the discharge of storm water into the sanitary sewer and the CCS system at J01P28 is, therefore, deactivated during the storm season.

The retention basin upstream of the CCS was cleaned out during the quarter. The Organoclay media in two of the five filtration tanks of the CCS were replaced at the end of July 2004.

Effectiveness In Reaching Goals:

The CCS treatment system has the ability to treat the influent to REC 1 standards. The effluent from the CCS system is discharged into a natural pool at the storm drain outlet and from there it proceeds through dense vegetation less than 100 feet to the confluence with the Aliso Creek. In this short distance the level of bacteria increases while flowing through the habitat.

Two information signs were fixed to the CCS system enclosure in an effort to help educate the public about waste and how it impacts the ocean. Our operations and maintenance staff servicing the CCS system has received several comments from the public such they are amazed how quiet it is, they appreciate the effort to screen in the equipment and they appreciate the effort to clean up the water.

Project Difficulties During The Past Year

- The equipment performs automatic backwashing of the multimedia filter and discharges the backwash to the MNWD. Backwash limitations were repeatedly exceeded when the equipment was operating in the automatic mode even after numerous attempts to clean the multi media.
  Solution: A request for an increase in the backwash was made to MNWD and the request has recently been granted to triple the permitted backwash volume from 3,000 gallons per day to 10,000 gallons per day.
- The CCS unit has experienced a high number of down times due to various equipment controlled shut downs.
  Solution: The contractor has performed additional maintenance when notified and has replace parts on warranty as needed. The storm drain outlet basin was cleaned out at the end of March 04 after the end of the storm season and prior to restart of the equipment. Rerouting of the backwash piping was implemented to allow for additional backwash of the Media filter.

- Due to the dense vegetation at the outlet and at the Aliso Creek main-stem, effluent water is currently ponding behind a dense mat of willow and mulefat roots and bacterial regrowth is occurring.
  Solution: In phase two (2) of this project will be to open up a less obstructed path to the creek for the effluent.
- The facility is surrounded by dense vegetation and organic matter continues to accumulate in the storm drain outlet basin. Clean up of the basin is difficult because of limited access.
  Solution: A permit to expand the equipment access pad has been applied for through Department of Fish and Game.

Conclusions And Recommendation

The Clear Creek Systems, Inc. system (CCS) is operating successfully and is reducing the contribution of contaminants to Aliso Creek. Changing the backwash procedure and allowing an increase in discharge of backwash volume to the Moulton Niguel Water District has improved the performance of the CCS system. The bacterial regrowth in the habitat is a larger problem and beyond the intended performance of the CCS system.

Based upon the one year operation of the CCS system, it is recommended that the operation be continued.

Figure 1. Clear Creek System, Inc. package plant treatment system installation at the Springdale Storm Drain outlet.

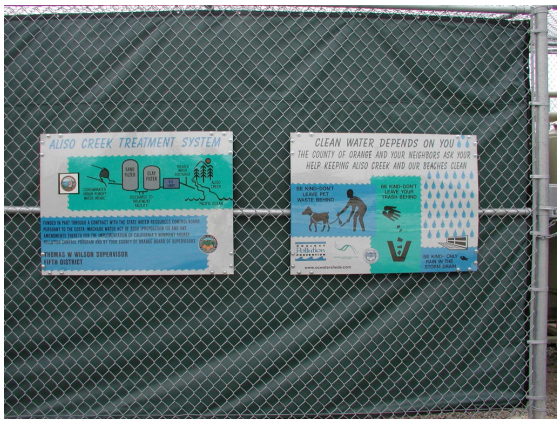

Figure 2. Educational Sign on the equipment enclosure

Figure 3. Discharge of effluent into habitat down stream of the Springdale Storm Drain outlet structure.

Aliso Beach
Orange County, California
Annual Summary 2003

Aliso Beach is a popular south Orange County beach that averages 120,000 visitors per month attendance for an annual total of 1,148,374 visitors. Aliso Creek drains a 35-square mile watershed area that has experienced significant commercial and residential development in the 20 years. Portions of the Cities of Laguna Beach, Laguna Niguel, Aliso Viejo, Aliso Woods Mission Viejo and Lake Forrest all drain into Aliso Creek. Urban runoff, adverse water quality due to high bacteria counts, sewer spills and erosion all impact the recreational value of the creek and its outlet at Aliso Beach.

Aliso Beach was closed an average of 16.5 days per year due to contamination from broken sewage pipes, urban runoff and stagnation of creek water (data provided by the US Army Corps of Engineers Watershed Management Feasibility Study for Aliso Creek). The AB 411 Posting Log for 1999, 2000 and 2001 is attached indicating closures, postings and types and quantities of bacteria or other conditions

The County of Orange installed a "Clear Creek" treatment system at one of four possible locations in Aliso Creek. The purpose of the "Clear Creek" system is divided into two phases. Phase 1 is to treat water at all of the locations to a REC 1 level. A future phase II project would be to treat water at potentially two locations to a high purity level to reduce the total dissolved solids TDS (salts). The high purity water would then be blended with secondary effluent from a local water treatment plant and used for beneficial reuse.

On July 30 at 4:00 PM the CCS equipment for the J01P28 CBI project was turned to auto and it is considered in full operation. This will constitute completion of the construction. The punch list is considered complete. PH grab samples will be taken daily. Training of PFRD staff was accomplished July 30, and MNWD staff toured the site August 6, 2003. At this time the package treatment plant is producing effluent at a REC-1 level. More monitoring will be required to demonstrate the positive impact of this project on Aliso Beach water quality.

Task	Sub-Task	Product	Completion Date
1.0		Project Management and Administration	November 15, 2003
2.0		CEQA	December 31, 2002
3.0		Quality Assurance Plan	October 15, 2002
4.0		Planning & Design	March 31, 2002
5.0		Project Construction	October 15, 2002
6.0		Monitoring and Reporting	December 15, 2003